

BOOKSTORE

750 - TREE IDENTIFICATION

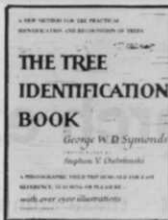
by *George Symonds*
 Pictorial reference to identifying trees by checking leaves, buds, branches, fruit and bark. Like its sister publication, SHRUB IDENTIFICATION, popular and botanical names are listed with index tabs for easy reference. **\$14.95**

760 - TREE MAINTENANCE

by *Pascal Pirone*
 The fourth edition of this guide for anyone involved in the care and treatment of trees. Special sections on tree abnormalities, diagnosing tree troubles, non-parasitic injuries and assessing the suitability of different trees. **\$49.95**

405 - WOODY ORNAMENTALS

by *Partyka, Joyner, Rimelspach, Carver*
 Illustrates plant identification characteristics. Organized in two basic sections: plant identification and plant disorders, this text utilizes 430 color photos, 430 line drawings and 45 black and white photos to simplify identification. **\$32.50**



345 - COST DATA FOR LANDSCAPE CONSTRUCTION 1988

by *Kathleen W. Kerr, Editor*
 An updated unit cost data reference for designers and cost estimators. Developed to fill the tremendous need for detailed landscape construction cost data. Laid out in easy-to-use CSI format. Annual. **\$35.00**

300 - LANDSCAPE DESIGN: A PRACTICAL APPROACH

by *Leroy Hannebaum*
 Geared for the commercial designer/salesperson, this is a one-stop guide to the landscape design process. Covers the entire highly competitive field including design analysis techniques, pointers on land forms, specialized business landscaping methods, environmental design guidelines, specifications, estimations, bids. **\$37.00**

305 - LANDSCAPE MANAGEMENT

by *James R. Feucht and Jack D. Butler*
 Planting and Maintenance of Trees, Shrubs, and Turfgrasses. Describes the basic principles of cultural management of installed landscapes. The important factors of plant growth, soils and fertilizers, improved planting techniques and new pruning techniques, integrated pest and disease management, and spray-equipment calibration and care are all featured. **\$29.95**

370 - LANDSCAPE OPERATIONS: MANAGEMENT, METHODS & MATERIALS

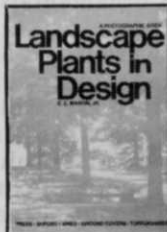
by *Leroy Hannebaum*
 An in-depth examination that combines technical training in landscape science with methods of accounting, business management, marketing and sales. Discusses effective methods for performing lawn installations, landscape planting and maintenance. Step-by-step accounting calculations are explained in simple terms. **\$34.00**

365 - LANDSCAPE PLANTS IN DESIGN

by *Edward C. Martin*
 An annotated photographic guide to the design qualities of ornamental plants and their aesthetic and functional use in landscape designing. Over 600 trees, shrubs, vines, ground covers and turfgrasses are described in nontechnical language. Over 1900 photographs. Provides a basis for selecting the best plant materials for any particular use in landscape design. Contains detailed indexes that provide quick reference to particular design qualities and growing conditions. **\$58.95**

375 - RESIDENTIAL LANDSCAPES

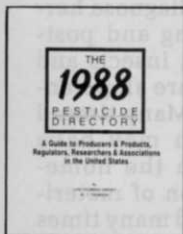
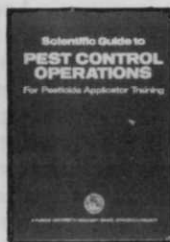
by *Gregory M. Pierceall*
 An excellent reference for individuals involved in the design and development of plantings and constructed features for residential sites. Illustrations and actual residential case study examples are used to communicate graphic, planning and design concepts which are the focus of this text. **\$41.00**



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 by *Walter Muenscher*
 Second edition. Premier text for identification and basic natural history for weeds found in the continental United States and Canada. Ecological data on weed biology combined with excellent keys and plant descriptions make this an essential reference book. **\$39.95**

125 - SCIENTIFIC GUIDE TO PEST CONTROL OPERATIONS

by *Truman, Bennett, Butts*
 Provides a sound basis for studying the technical aspects of pest control. Covers pesticides, safety, health and environmental concerns, equipment, flies and mosquitos, rats and mice, birds and much more. **\$35.00**



500 - THE 1988 PESTICIDE DIRECTORY
 by *Lori Thomson Harvey and W. T. Thomson*
 A Guide to Producers and Products, Regulators, Researchers and Associations in the United States. For the person who needs to know anything in the United States pesticide industry. Includes Basic Manufacturers and Formulators with their products, key personnel, managers, district/regional offices and other pertinent information. For United States pesticide information in one place, this directory is a must. **\$75.00**

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Davey's research examines safety question

Herbicides used properly will not damage ornamentals, turf, or non-target species. That is, according to the results of a multi-year joint research project conducted by Davey Tree and Sandoz Crop Protection Corp.

The study was designed because lawn care herbicides such as Trimec, dicamba, MCPP and 2,4-D are often blamed by homeowners for damage to ornamentals. Also, a lack of research information and pictorial guides exist showing the typical symptoms of lawn herbicide damage, says Dr. Bal Rao, Davey's manager of technical resources.

"One of the most common complaints from our lawn care clients is herbicide injury to ornamentals," says Rao.

In all, 210 plants were tested beginning in 1980 at the company's research farm in Shalersville, Ohio. Ornamental shrubs and trees—including arborvitae, Colorado blue spruce, rose, privet, juniper, taxus, rhododendron, sugar maple, pin oak and linden—were randomly planted in blocks.

Questions to be answered

Key answers Rao sought included the potential for drift contamination from

these compounds, the rate at which they build-up, and lateral and downward movement in the soil.

The herbicide treatments and rates per 1,000 sq. ft. consisted of: 1) no herbicide, 2) Trimec at the recommended rate, 3) Trimec at twice the recommended rate, and 4) twice the recommended rate of the three individual compounds that comprise Trimec: 2,4-D, dicamba and MCPP. "There's always the potential for damage to ornamental broadleaves by these materials (Trimec, dicamba, MCPP and 2,4-D) if the spray material comes in contact with actively growing broadleaf plants as a result of sloppy application—or if the material is applied on a windy day," says Rao.

The first applications were made in late April 1982 at Davey's standard rates and methods. No evidence of herbicide injury was found in any of the treatments until 1984, when injury symptoms were noted on only three species: linden, maple and taxus. The injury symptoms were observed in only those blocks treated at twice the recommended rate with dicamba. No other injuries were noted.

Rao says that the foliar damage

noted was not permanent, and the plants eventually recovered. "If these materials are used properly at recommended rates, they aren't harmful or detrimental, and one should expect no adverse effect on non-target species," says Rao.

Containerized plants examined

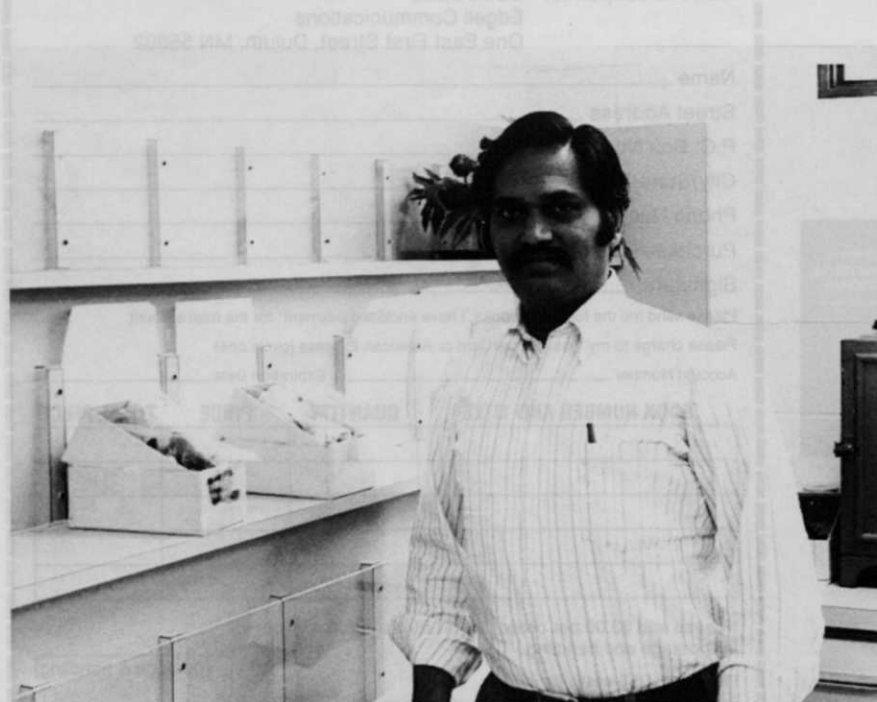
The companies also completed a "dramatic drift study" where containerized plants—including rhododendron, juniper, ivy, grape and raspberry—were treated directly with dicamba, 2,4-D and Trimec.

Plants were distributed at random in test plots and treated directly with recommended rates of dicamba, 2,4-D and Trimec in August 1984. Subsequent visual observations for herbicide spray injury were made at one-week intervals until October.

Rao discovered that various species respond differently to the herbicides. Rao and a panel of experts later rated the containerized plants on a sensitivity scale from low to high.

The Davey Tree species sensitivity study discovered that juniper experienced only a slight yellowing of young leaves from contact with all three materials, while arborvitae and rhododendron suffered damage ranging from slight yellowing to cupping of new growth, depending on the material applied. However, neither species experienced terminal bud kill or complete defoliation from dicamba, 2,4-D or Trimec.

According to Rao, less than one percent of the complaints analyzed by the Davey lab are linked to herbicide damage, and these problems are most likely caused by inexperienced applicators. "The fact is that insects, diseases, mites, or even frost and heat can cause mimicking symptoms of herbicide damage which complicates diagnosis," says Rao. "It's very hard to diagnose herbicide damage. Planting and post-planting care, diseases, insects and environmental factors are all potential causes of damage. Many times I find that the problem may have started years ago with the homeowner. Over-application of materials is quite common, and many times the damage to ornamentals doesn't appear until the following season."



Bal Rao, Ph.D, is manager of Technical Resources for the Davey Tree Co., Kent, Ohio and a monthly contributor to *Landscape Management*.

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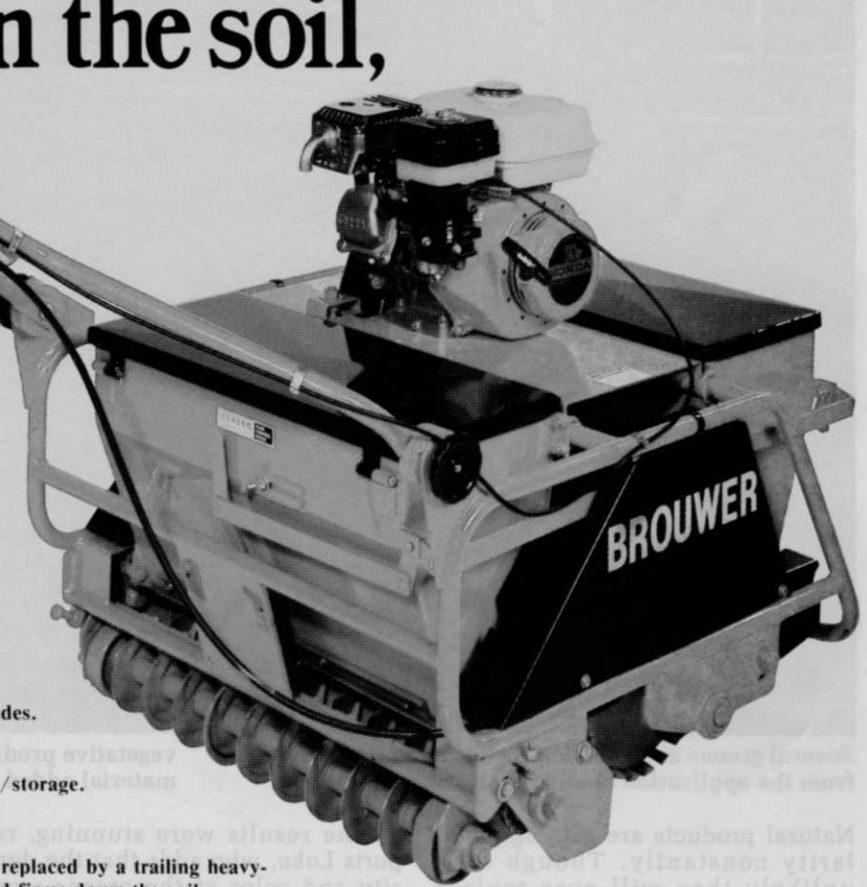
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Circle No. 102 on Reader Inquiry Card

Not just a load of....



Several greens at Quail Hollow Resort in Ohio benefitted from the application of an all-natural, non-burning vegetative product containing poultry manure. The material added consistency to soil nutrition levels.

Natural products are gaining popularity constantly. Though it is unlikely they will ever replace pesticides and fertilizer, there is little doubt natural materials have a place in the market.

Last fall, Jim Loke, superintendent at Quail Hollow Resort in Painesville, Ohio, was in the market for a natural material to add to the topdressing on course greens. His need for a good natural additive resulted from a lack of Pennsylvania peat and the questionable quality of northern Ohio peat.

What he found was an all-natural, non-burning vegetative product containing poultry manure that is distributed by a Painesville-based company called Bio-Ganics. Chemical analysis of the product showed approximately a 3-2-2 percentage-by-weight N-P-K mix.

In November 1987, Loke applied the product to 11 of his greens and the practice green. Holes 3, 4 and 5 received the equivalent of 1.5 lb. N per 1,000; 1, 6, 9 and 11 received 3.0 lb. N. The double green of holes 2 and 7 served as the test green. Two received the 3 lb. rate, 7 got 1.5 lb., with the area between serving as the check plot.

The results were stunning, reports Loke, who adds that the density and color of the greens were excellent.

Application rates

Greens that received 3.0 lbs. showed no aerifier holes coming out of dormancy, the 1.5 rate showed some and the check plot showed all the aerifier holes.

"What's been real positive," Loke says, "is the public relations aspect. The golf pro, the members and the business customers were overwhelmed at the mid-season quality of the greens at the end of April."

Loke adds that the nitrogen amount put on with the natural was in addition to his regular N totals for the year. "It is a supplementary fertilizer amendment," he states.

Part of the benefit of adding this and other natural products as a source of peat is their cation exchange capacity (CEC), which measures a soil's ability to hold nutrients. Straight sand has a low CEC. In addition to raising the CEC, the natural product acts as a soil buffering agent, making the soil nutrition levels a bit more consistent

over time. This means there are fewer peaks and valleys associated with mostly sand greens. "High quality topdressing material holds nutrients," Loke says, emphasizing the "high quality" aspect.

"At the time of application, the turf was not lush, there was no excess top growth," Loke explains. "We just had a dense, thick, healthy green turf." Greens remained mostly disease-free throughout most of the summer of 1988. However, it is quite possible this was a result of the dry, low humidity conditions the Midwest experienced well into July.

Loke points out that this and other natural topdressing and fertilizer products are not a panacea. They are another tool. "It looks like a viable source of natural material to add to the sand," he notes. "We had it chemically analyzed and it looks like it will satisfy most of our needs."

The product Loke used, because of its very coarse texture, is not one to be used in season. It is ideal for a late fall feeding, though. If budget is not a factor, he recommends a 3.0 lb. application rate in the fall. If cash flow is tight, try the 1.5 lb. rate. Then wait until April.

TRUCK ON DOWN

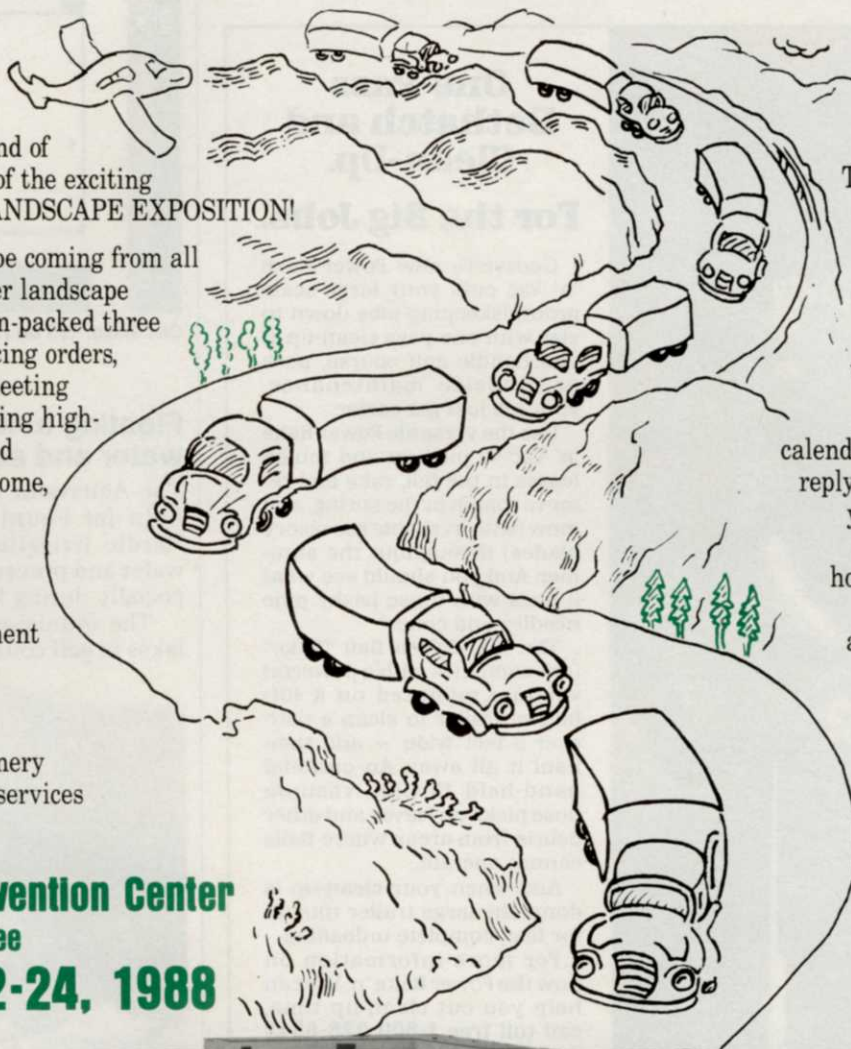
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OCTOBER 1988/LANDSCAPE MANAGEMENT 67

PRODUCTS

Controller handles multiple irrigation schedules

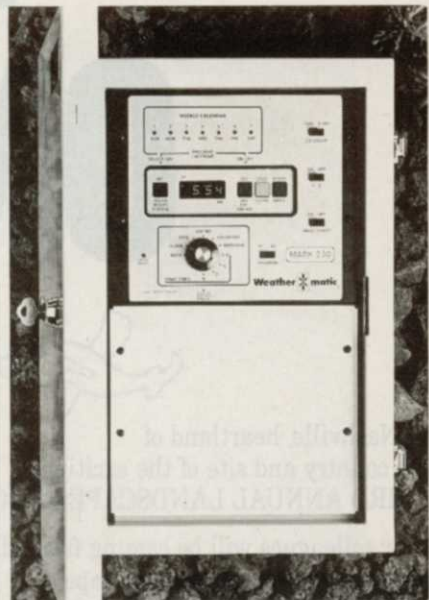
The Mark 200 series micro-processor controllers from Weather-Matic provide a choice of 12, 18, 24 or 30 stations in a heavy duty housing. According to the company, the controllers are easy to program and require minimal training.

An option of six- or seven-day calendar programming allows even-day, odd-day or third-day watering. The dual watering feature provides two

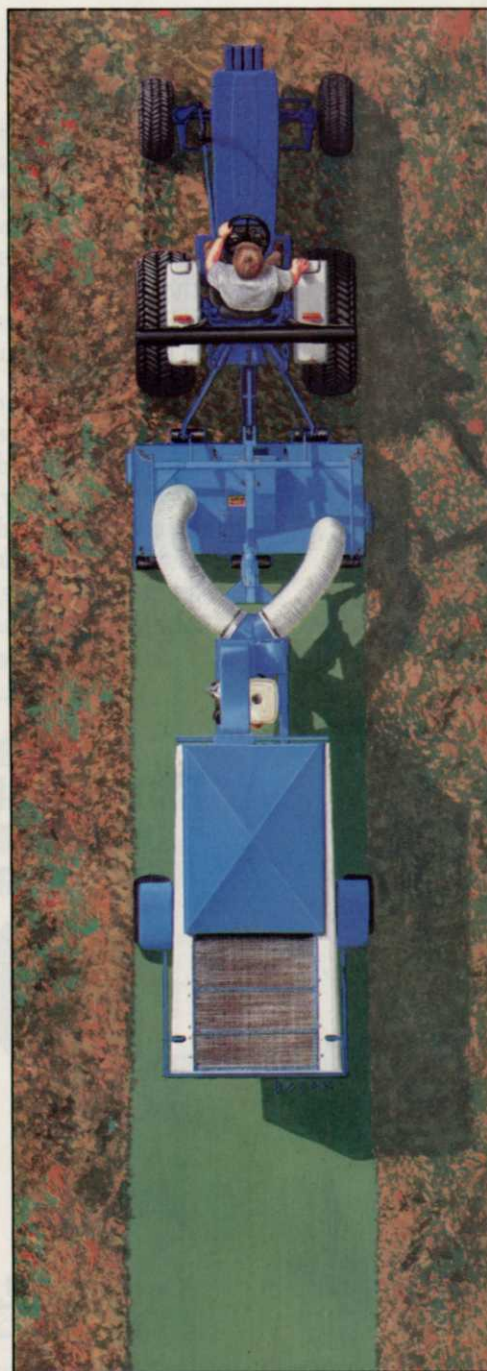
independent programs with four daily start times each. Also, a start-up/back-up program automatically gives two daily watering starts on all stations in the absence of a specific program. The back-up can be switched off.

A separate test program allows the operator to run all P1 or P2 stations for two minutes each without disrupting previously programmed duration times. The test program will skip unprogrammed stations.

The company introduced the controllers at the Landscape Industry Show in Long Beach, Calif. in April.



Circle No. 195 on Reader Inquiry Card



One-Pass Dethatch and Clean-Up. For the Big Jobs.

Goossen's new Power Rake 'n' Vac cuts your large-scale groundskeeping jobs down to size with one-pass clean-up. If you handle golf course, park or roadside maintenance, your job just got easier.

Use the versatile Power Rake 'n' Vac to pick up and mulch leaves in the fall, rake and remove thatch in the spring, and mow (with available accessory blades) throughout the summer. And you should see what it does with those pesky pine needles and cones!

The PTO-driven flail "Rake" unit combines with a powerful vacuum mounted on a 101-bushel trailer to clean a path over 5 feet wide — and then haul it all away. An optional hand-held flexible vacuum hose picks up leaves and other debris from areas where flails cannot operate.

And when your clean-up is done, the large trailer tilts for fast, complete unloading.

For more information on how the Power Rake 'n' Vac can help you cut clean-up time, call toll free 1-800-228-6542 (in NE, call 402-228-4226).

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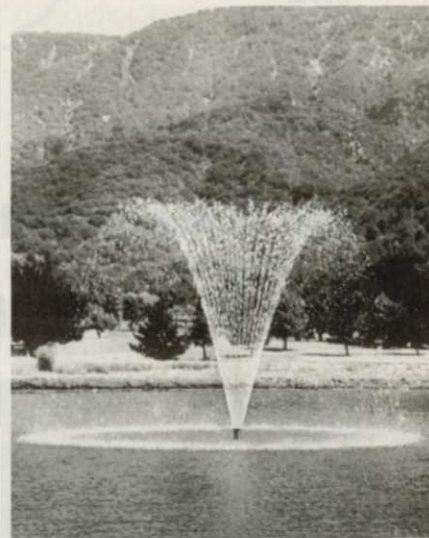
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Floating aerator circulates water and adds beauty

The Aquavator floating aerator from Rain Jet Fountains, a division of Hardie Irrigation, helps condition water and prevent algae build-up, especially during hot summer months.

The fountains work on ponds or lakes in golf courses, retention basins

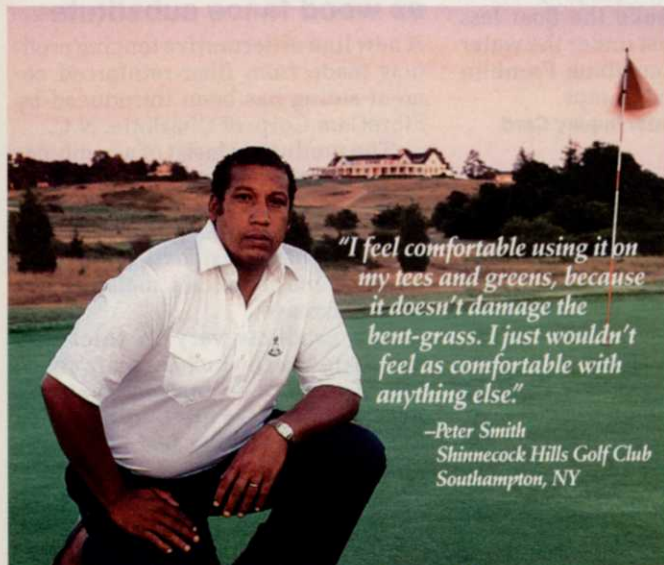


or as general waterscape on commercial sites. The aerators have several choices of nozzle displays available, and all units can be fitted with lights.

The one-piece float body is injection molded polyethylene. Phillips 366 cross-linked polyethylene makes the float resistant to ultraviolet rays.

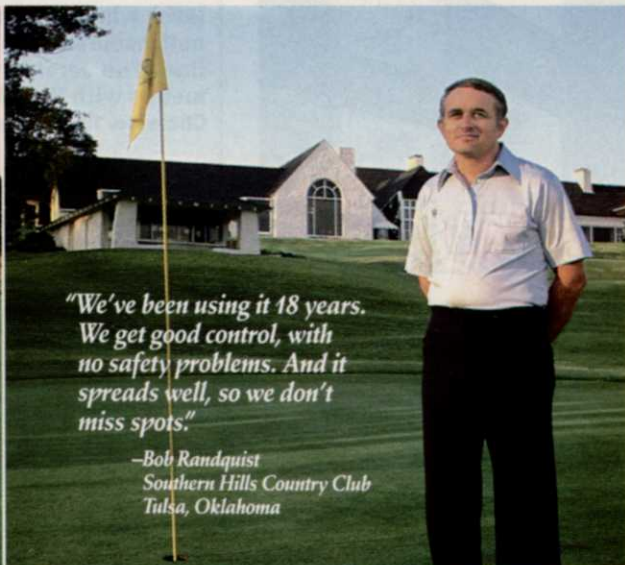
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Why Betasan is trusted most by the best.



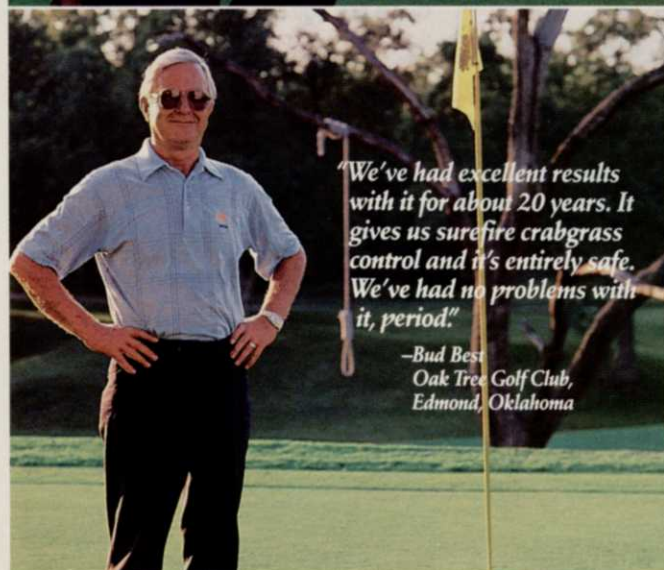
"I feel comfortable using it on my tees and greens, because it doesn't damage the bent-grass. I just wouldn't feel as comfortable with anything else."

*—Peter Smith
Shinnecock Hills Golf Club
Southampton, NY*



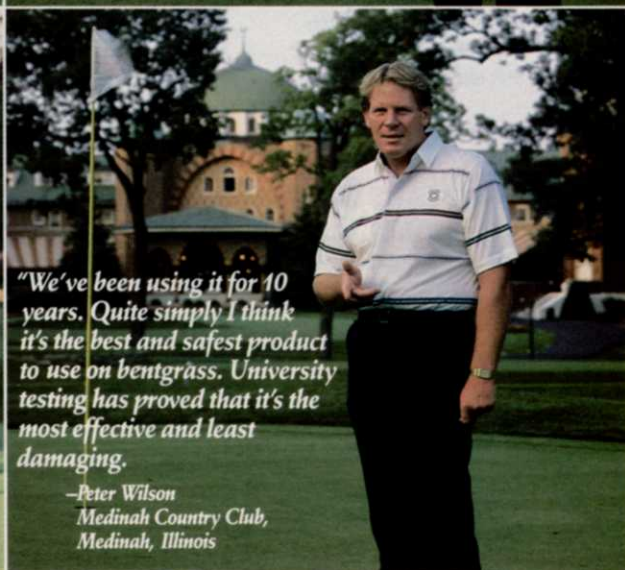
"We've been using it 18 years. We get good control, with no safety problems. And it spreads well, so we don't miss spots."

*—Bob Randquist
Southern Hills Country Club
Tulsa, Oklahoma*



"We've had excellent results with it for about 20 years. It gives us surefire crabgrass control and it's entirely safe. We've had no problems with it, period."

*—Bud Best
Oak Tree Golf Club,
Edmond, Oklahoma*



"We've been using it for 10 years. Quite simply I think it's the best and safest product to use on bentgrass. University testing has proved that it's the most effective and least damaging."

*—Peter Wilson
Medinah Country Club,
Medinah, Illinois*

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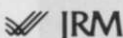
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PRODUCTS from page 68

A water level adjustment feature built in to the float body assures proper float level which can make the float less noticeable sitting just under the water line. The aerators combine Franklin motors with Rain Jet pumps.

Circle No. 197 on Reader Inquiry Card

Lawn roller incorporates tractor/operator weight

The Rol-A-Lawn turf roller differs from pull-type rollers in that it rests under the back wheels of the tractor. This combines the tractor's weight, the operator's weight plus the weight of the fluid-filled roller.

The roller can be attached by one person without using tools. Simply



back the tractor onto the unit and connect the unit to the tractor. The tongue weight is less than 100 lbs. but the combined weight is more than 1,000 lbs.

The Rol-A-Lawn is ideal for golf courses, athletic fields and lawns.

Circle No. 198 on Reader Inquiry Card

Garden tractor available with two types of engine

Speedex Tractor Corp. has introduced the Falcon Garden Tractor, which offers either a 16 hp Briggs & Stratton or 18 hp Kohler twin cylinder engine mounted on a welded or solid bar frame.

The Falcon is available in hydrostatic or gear drive with many attachments, including quick attach 42-, 50-, and 60-inch mowing decks.



Circle No. 199 on Reader Inquiry Card

Cement material acts as wood fence substitute

A new line of decorative fencing products made from fiber-reinforced cement siding has been introduced by FibreCem Corp. of Charlotte, N.C.

The products consist of a combination of organic fibers, cement, silica, water and other proprietary additives for added strength, durability and long life. They resist fading, rot, deterioration and chemicals, moisture and impact damage.

The products vary in thickness from $\frac{3}{8}$ to $\frac{5}{8}$ of an inch for plain styles and $\frac{3}{8}$ to $\frac{1}{2}$ of an inch for textured styles. Plain styles are 6 to 12 inches wide and from 8 to 12 feet long. Textured styles are 12 feet long and 9 inches wide. Textured styles include stucco, timber or cross cut and are available coated or uncoated.

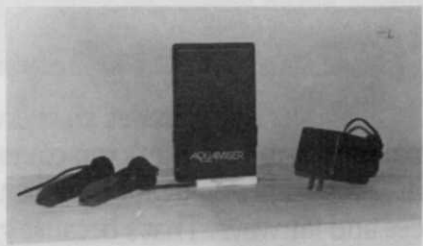
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Moisture sensor adapts to existing irrigation

The Aquamiser micro-electronic moisture sensor from Conservation Technologies works with either existing or new irrigation systems to provide automatic moisture control on the system.

A time clock controller, solenoid valve or its own 24-volt system can power Aquamiser, which will measure narrow moisture ranges in all soils.

Aquamiser senses moisture levels



and will interrupt irrigation if moisture exceeds a preset level, determined by the user. When moisture level is low, Aquamiser allows regular irrigation schedules.

The unit senses moisture through two stainless steel probes penetrating into the root zone. A transmitted electronic pulse changes when soil moisture changes.

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Vacuum loaders clean up leaves fast and efficiently

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